

Session 6

Fraction Flags

Materials

- Pictures of flags showing halves (optional)
- Color tiles (1 tub per pair)
- Student Sheet 16 (1–2 per student, class; 1 per student, homework)
- Drawing paper (1–2 sheets per student)
- Crayons or markers
- Construction paper squares 2" or 3" (12 per student)
- Paste or glue sticks
- Student Sheet 24 (1 per student, homework)

What Happens

Students make rectangular flags that are divided into halves with each fractional part of the flag a different color. They decide on the size of their flag and how to divide it in half. Students use color tiles to design their flags, then copy the design by gluing construction paper squares on large paper. Their work focuses on:

- constructing a rectangular region that is divided into halves
- copying and enlarging a design

Start-Up

Quick Images Use the 10 Frames images and show *two* numbers on the overhead projector at the same time. Students write down the sum of the two and/or the addition expression the numbers represent. For complete details, see p. 125.

Today's Number Sometime during the school day, students brainstorm ways to express Today's Number. Encourage students to use both addition and subtraction in their number sentences. For example, if Today's Number is 100, possible expressions include: $60 + 60 - 20$ or $90 - 40 + 50$. Add a card to the class counting strip and fill in the next number on the blank 200 chart. For complete details, see p. 116.

Activity

Fraction Flags

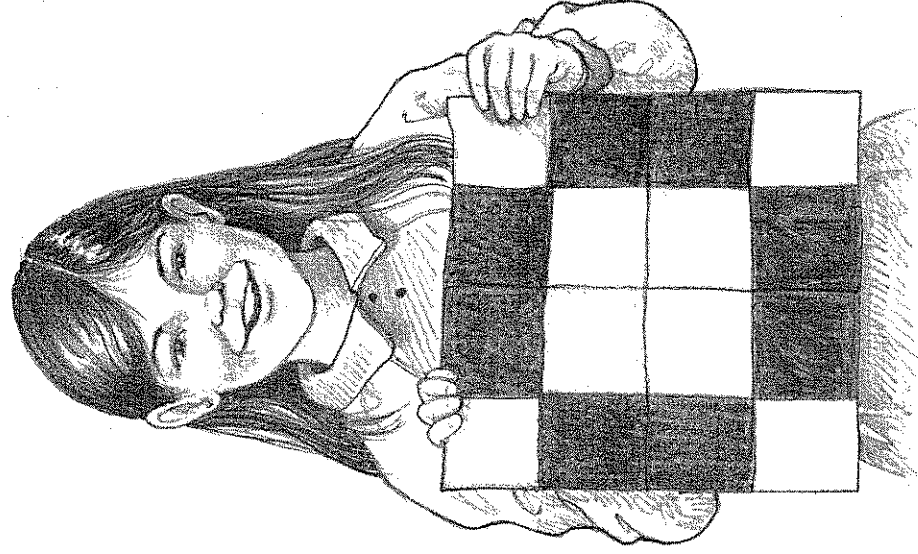
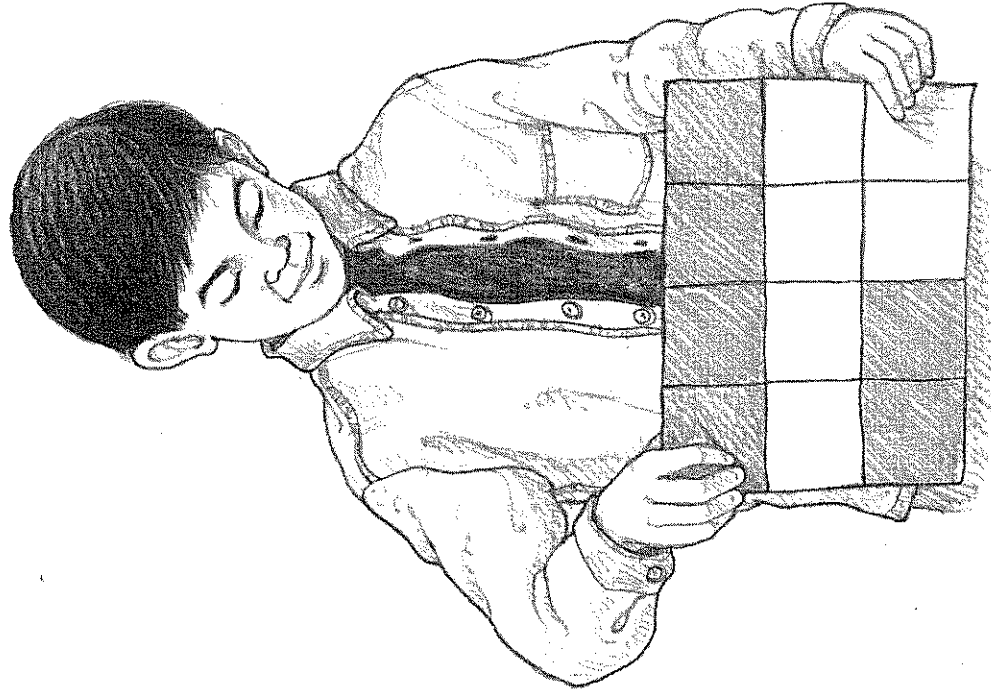
If you have pictures of flags that are divided in halves, begin this activity by showing these to students. (Posters showing national flags are commercially available. Most almanacs and encyclopedias contain color inserts of flags.)

These are pictures of flags from different countries in the world. [*Point out the flags and name the countries they represent.*] Some of these flags remind me of our work with rectangles. [*Point out a few flags divided in halves.*] What shape are these flags? How are they like some of the rectangles you have been working with? Do you see other flags divided in halves?

Students may volunteer that flags and their rectangles have the same shape, but most students may not be familiar with different kinds of flags and may not make the connection that both flags and their rectangles can have halves.

Today we are going to design and make flags. Your flag will be a rectangle that has halves. Use the color tiles and graph paper to design your flag. Then make your flag by gluing these larger paper squares onto drawing paper. Use two colors and make half your flag each color.

Have students first plan and design their flags using color tiles and graph paper. The color tiles can be arranged in a pattern or design, but each color should represent one-half of the design. Students can record their flag by coloring spaces on the graph paper.



As students design their flags, ask them to describe their flags to you. Remind them to make sure their flag designs show halves before they make their flags with the paper squares.

You might display students' completed flags in a school corridor, or hang them from the classroom ceiling (by attaching them to a string going across the room). As students compare the flags, ask questions such as the following.

- What sizes are the rectangles that have been made into flags?
- How are the flags designed so they are half one color and half another?
- How are flags that are the same size alike and how are they different?
- How are flags that are different sizes similar?

Session 6 Follow-Up

Homework

Half-and-Half Flags Students use Student Sheet 16, Inch Graph Paper, to design a fraction flag at home. The flag can include a pattern or design, but each color should represent one-half. Students also fill in the blanks on Student Sheet 24, Half-and-Half Flags, with information about their flags.

Extensions

Congruent-Halves Flags Students make a second rectangular flag that has two congruent halves using construction paper squares, crayons, or paint. Students plan their flags first on smaller paper.

Halves Display Students make a display of things in halves and write on index cards to identify them. Some possibilities are a jar half full, a bag of blocks half of one color and the other half another color, a half-eaten cookie, a mark halfway across the top of a table and another mark halfway up the leg of the table.

Half-and-Half Flags

Make a rectangular flag on Student Sheet 16, Inch Graph Paper. Half of the squares in your flag need to be one color, and the other half needs to be a different color.

I used _____ squares.

One-half is _____ color.

One-half is _____ color.

Each half has _____ squares.

Name _____

Date _____

Student Sheet 16

Inch Graph Paper

